LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE





For The Technical Direction Of The LTPP Program

Program Area: MATERIALS Directive Number: M-5

Date: March 18, 1994 Supersedes: N/A

Subject: Field Sampling Guidelines for P60 (Determining Expansive Soils)

Splitspoon Sampling for obtaining Material for the P60 Test

Continuous splitspoon sampling is required to obtain samples for LTPP Protocol P60, "Determining Expansive Soils." This sampling shall be conducted at D-type sampling locations as specified on the site specific field material sampling and testing plans developed for each SPS-8 project. Continuous splitspoon sampling shall be conducted to a depth of 6 m (20 feet) using a truck mounted drill rig similar to that used for the shoulder auger boring (S-type sampling locations). For a given 6 m (20 feet) sampling location, 10 samples, each representing O.6 m (2 feet) of material, shall be retrieved. A six-inch hollow-stem continuous flight auger with an inside diameter greater than 56 mm (2.2 in.) shall be used to obtain the splitspoon samples.

Sampling shall be done using only a 64 kg (140 lb) hammer, 762 mm (30 in.) drop and a sampler as specified in AASHTO T206, "Penetration Test and Split-barrel Sampling of Soils." Core retainers shall be used when necessary to retain soil. Care shall be exercised to provide a free fall of the hammer (minimum friction and straight pipe) and to minimize variations in drop height. It is essential that a <u>clearly</u> visible reference mark be identified on the splitspoon drop hammer rod so that the drop height is consistent. Blow counts and strata depths and field classifications shall be recorded on Sampling Data Sheet 4-2 (Appendix B of the LTPP Materials Sampling and Testing Requirements for Experiment SPS-8, attached).

After opening the barrel, the recovered material shall be carefully examined and logged as to the length of recovery and description of the soil. If more than one type (or obvious variation within type) of soil is encountered, the depth and description of each stratum shall be recorded. All material from the splitspoon sample shall be placed in sealable, moisture-proof containers (jars) after recording the strata descriptions. Each container shall be sealed to prevent evaporation of the soil moisture.

Note: From each 0.6 m (2 feet) splitspoon sampling location, approximately .3 - .45 m

(12-18 in.) of material will be recovered. For the purposes of the P60 test, even if a stratum interface occurs within the O.6 m (2 feet) sampling depth, the combined material shall be considered representative of the 0.6 m (2 feet) sampling depth and tested accordingly.

If rock, boulders or other forms of dense material (refusal) are encountered during splitspoon sampling, another attempt for sampling the subgrade shall be made at a different location with a longitudinal offset of 1.5 to 3.0 m (5 to 10 ft). If refusal occurs at the second location, splitspoon sampling shall be terminated. If the second splitspoon sample is successful, the samples from the first splitspoon sampling attempt may be discarded in the field. If both splitspoon sample attempts encounter refusal, the sampling shall be stopped and the samples from the deepest penetration shall be placed in jars, sealed, and shipped to the appropriate laboratory for testing.

Samples shall be marked, packaged and shipped in accordance with the guidelines contained in the SPS-8 Material Sampling and Testing Guidelines. However, an additional item denoting the sampling depth shall be provided on the sample label/tag. The samples shall be assigned up to a five-digit number with the first two digits being letters and the remaining digits shall be numbers. The samples shall be numbered in accordance with the SPS-8 Material Sampling and Testing Guidelines (i.e., JS01, JS02, etc.) and as per the site specific material sampling and testing plan. It is very important that all jar samples extracted from the same sampling location be shipped to the laboratory together; preferably in the same box.

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Enclosure